

IN THE CLAIMS

1. (Original) A method of manufacturing an integrated circuit package, comprising:  
  
installing a carrier onto an upper surface of a substrate, wherein said carrier defines a cavity;  
  
attaching a semiconductor die to said upper surface of said substrate within said cavity of said carrier;  
  
aligning an assembly over said semiconductor die, wherein said assembly comprises a heat sink and a thermally conductive element;  
  
resting said assembly on said carrier such that said thermally conductive element does not directly contact said semiconductor die; and  
  
encapsulating said cavity to form a prepackage such that a portion of said heat sink is exposed to the surroundings of said package.
2. (Original) The method of claim 1, wherein said assembly is rested on said carrier such that said thermally conductive element and said semiconductor die are separated by a distance of about five (5) mils or less.
3. (Original) The method of claim 1, wherein said attaching said semiconductor die to said upper surface of said substrate is by a direct chip attachment.
4. (Original) The method of claim 1, further comprising singulating said prepackage to form said package, wherein a top portion and a side portion of said heat sink are exposed to the surroundings of said package.
5. (Original) A method of manufacturing an integrated circuit package, comprising:  
  
installing a carrier onto a substrate;

attaching a semiconductor die to said substrate;  
aligning an assembly over said semiconductor die, wherein said assembly comprises a heat sink and a thermally conductive element;  
resting said assembly on said carrier such that said thermally conductive element does not directly contact said semiconductor die; and  
encapsulating said thermally conductive element and said heat sink such that a portion of said heat sink is exposed to the surroundings of said package.

6. (New) The method of claim 5, wherein said thermally conductive element is substantially shaped as a right rectangular solid.

7. (New) The method of claim 5, wherein said heat sink comprises a top portion, a side portion, and an extending finger when viewed from a top of said package, said extending finger comprising said side portion.

8. (New) The method of claim 7, wherein said extending finger extends from a corner of said heat sink.

9. (New) The method of claim 5, wherein said encapsulating comprises encapsulating said thermally conductive element and said heat sink such that said top portion and said side portion of said heat sink are exposed to the surroundings of said package.

10. (New) The method of claim 5, wherein said thermally conductive element is made of a material from the group consisting of alumina, aluminum nitride, beryllium oxide, ceramic material, copper, diamond compound, and metal.

11. (New) The method of claim 5, wherein said integrated circuit package is a ball grid array integrated circuit package.

12. (New) The method of claim 5, wherein said assembly is rested on said carrier such that said thermally conductive element and said semiconductor die are separated by a distance of about five (5) mils or less.

13. (New) The method of claim 5, wherein said attaching said semiconductor die to said substrate is by a direct chip attachment.

14. (New) The method of claim 5, further comprising singulating, wherein a top portion and a side portion of said heat sink are exposed to the surroundings of said package.

15. (New) A method of manufacturing an integrated circuit package, comprising:

electrically connecting a semiconductor die to a substrate;

coupling a thermally conductive element with a heat sink such that said thermally conductive element is interposed between both said semiconductor die and said heat sink, wherein said thermally conductive element does not directly contact said semiconductor die, and wherein said heat sink comprises a top portion, a side portion, and an extending finger when viewed from a top of said package, said extending finger comprising said side portion;

encapsulating said thermally conductive element and said heat sink such that said top portion and said side portion of said heat sink are exposed to the surroundings of said package.

16. (New) The method of claim 15, wherein said extending finger extends from a corner of said heat sink.

17. (New) The method of claim 15, wherein said thermally conductive element and said semiconductor die are separated by a distance of about five (5) mils or less.

18. (New) The method of claim 15, wherein said electrically connecting is by a direct chip attachment.

19. (New) The method of claim 15, further comprising singulating, wherein a top portion and a side portion of said heat sink are exposed to the surroundings of said package.

20. (New) The method of claim 15, wherein said integrated circuit package is a ball grid array integrated circuit package.